



TORQ Analysis of Bindery Workers to Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Bindery Workers	51-5011.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	51-4122.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:

88

Ability TORQ				Skills TORQ				Knowledge TORQ			
Level		<div><div></div></div> 94		Level		<div><div></div></div> 84		Level		<div><div></div></div> 86	
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Information Ordering	45	4	62	No Skills Upgrade Required!				No Knowledge Upgrades Required!			
Problem Sensitivity	38	4	56								

LEVEL and IMPT (IMPORTANCE) refer to the Target Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders. GAP refers to level difference between Bindery Workers and Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Bindery Workers	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	Importance
Control Precision	52	46	75
Manual Dexterity	44	44	63
Information Ordering	41	45	62
Near Vision	42	41	58
Problem Sensitivity	34	38	56
Arm-Hand Steadiness	45	37	53

Skill Level Comparison - Abilities with importance scores over 69



Description	Bindery Workers	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	Importance
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Bindery Workers	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	Importance

Experience & Education Comparison

Related Work Experience Comparison				Required Education Level Comparison			
Description	Bindery Workers	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders		Description	Bindery Workers	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	
10+ years	0%	0%		Doctoral	0%	0%	
8-10 years	0%	0%		Professional Degree	0%	0%	
6-8 years	0%	2%		Post-Masters Cert	0%	0%	
4-6 years	2%	6%		Master's Degree	0%	0%	
2-4 years	7%	13%		Post-Bachelor Cert	0%	5%	
1-2 years	24%	9%		Bachelors	0%	5%	
6-12 months	16%	10%		AA or Equiv	0%	11%	
3-6 months	0%	8%		Some College	0%	0%	
1-3 months	0%	0%		Post-Secondary Certificate	0%	11%	
0-1 month	3%	2%		High School Diploma or GED	56%	49%	
None	44%	47%		No HSD or GED	42%	16%	

Bindery Workers

Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

Most Common Educational/Training Requirement:

Short-term on-the-job training

Moderate-term on-the-job training

Job Zone Comparison

2 - Job Zone Two: Some Preparation Needed

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Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

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These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

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Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

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Tasks

Bindery Workers

Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

Core Tasks

Core Tasks

Generalized Work Activities



Generalized Work Activities:

- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Specific Tasks

Occupation Specific Tasks:

- Clean work areas, and maintain equipment and work stations, using hand tools.
- Crease or compress signatures before affixing covers; then place paper jackets on finished books.
- Examine stitched, collated, bound, and unbound product samples for defects such as imperfect bindings, ink spots, torn or loose pages, and loose and uncut threads.
- Feed books and related articles such as periodicals and pamphlets into binding machines, following specifications.
- Fill glue reservoirs, turn switches to activate heating elements, and adjust flow of glue and speed of conveyors.
- Fill machine paper feeds.
- Install and adjust bindery machine devices, such as knives, guides, rollers, rounding forms, creasing rams, and clamps, in order to accommodate sheets, signatures, or books of specified sizes, using hand tools.
- Lubricate and clean machine parts, and make minor repairs in order to keep machines in working condition.
- Maintain records of daily production, using specified forms.
- Mount and secure rolls or reels of wire, cloth, paper, or other material onto machine spindles.
- Move controls to adjust and activate bindery machines.
- Observe and monitor machine operations to detect malfunctions and to determine

Generalized Work Activities:

- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

Specific Tasks

Occupation Specific Tasks:

- Add chemicals and materials to workpieces or machines to facilitate bonding or to cool workpieces.
- Anneal finished workpieces to relieve internal stress.
- Assemble, align, and clamp workpieces into holding fixtures to bond, heat-treat, or solder fabricated metal components.
- Clean, lubricate, maintain, and adjust equipment to maintain efficient operation, using air hoses, cleaning fluids, and hand tools.
- Compute and record settings for new work, applying knowledge of metal properties, principles of welding, and shop mathematics.
- Conduct trial runs before welding, soldering or brazing; make necessary adjustments to equipment.
- Correct problems by adjusting controls, or by stopping machines and opening holding devices.
- Devise and build fixtures and jigs used to hold parts in place during welding, brazing, or soldering.
- Dress electrodes, using tip dressers, files, emery cloths, or dressing wheels.
- Fill hoppers and position spouts to direct flow of flux, or manually brush flux onto seams of workpieces.
- Give directions to other workers regarding machine setup and use.
- Immerse completed workpieces into water or acid baths to cool and clean components.
- Inspect, measure, or test completed



whether adjustments are needed.

- Open machines and remove and replace damaged covers and books, using hand tools.
- Punch holes in paper sheets, and fasten sheets, signatures, or other material, using hand or machine punches or staplers.
- Read work orders to determine setup specifications and instructions.
- Record production sheet information such as the amount of time spent on specific tasks.
- Remove broken wire pieces from machines, and load machines with new spools of wire.
- Remove printed material or finished products from machines or conveyors, wrap products in plastic, and stack them on pallets or skids or pack them in boxes.
- Secure reels of stitching wire on spindles, and thread wire through feeding, cutting, stitch forming, and driving mechanisms to load stitcher heads for stapling.
- Set machine controls to adjust lengths and thicknesses of folds, stitches, or cuts, to synchronize speed of feeding devices and stitching, and to adjust tension on creasing blades and folding rollers.
- Set up, or set up and operate, machines that perform binding operations such as pressing, folding, and trimming on books and related articles.
- Start machines and make trial runs to verify accuracy of machine setups.
- Stitch or glue endpapers, bindings, and signatures to attach them.
- Stock supplies such as signatures, books, or paper.
- Stop machines, cut threads that connect books, and stack separated books.
- Thread spirals in perforated holes of items to be bound, using spindles or rollers.
- Train workers to set up, operate, and use automatic bindery machines.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- apply adhesives, caulking, sealants, or coatings
- clean equipment or machinery
- clean rooms or work areas
- collate printed materials
- demonstrate or explain assembly or use of equipment
- examine products or work to verify conformance to specifications
- fabricate, assemble, or disassemble

metal workpieces to ensure conformance to specifications, using measuring and testing devices.

- Lay out, fit, or connect parts to be bonded, calculating production measurements as necessary.
- Load or feed workpieces into welding machines in order to join or bond components.
- Mark weld points and positions of components on workpieces, using rules, squares, templates, and scribes.
- Observe meters, gauges, and machine operations to ensure that soldering or brazing processes meet specifications.
- Prepare metal surfaces and workpieces, using hand-operated equipment such as grinders, cutters, or drills.
- Read blueprints, work orders, and production schedules to determine product or job instructions and specifications.
- Record operational information on specified production reports.
- Remove workpieces and parts from machinery after work is complete, using hand tools.
- Select torch tips, alloys, flux, coil, tubing, and wire, according to metal types and thicknesses, data charts, and records.
- Select, position, align, and bolt jigs, holding fixtures, guides, and stops onto machines, using measuring instruments and hand tools.
- Set dials and timing controls to regulate electrical current, gas flow pressure, heating/cooling cycles, and shut-off.
- Set up, operate, and tend welding machines that join or bond components to fabricate metal products or assemblies.
- Start, monitor, and adjust robotic welding production lines.
- Tend auxiliary equipment used in welding processes.
- Transfer components, metal products, and assemblies, using moving equipment.
- Turn and press knobs and buttons, or enter operating instructions into computers to adjust and start welding machines.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- braze metal parts or components together
- clean equipment or machinery
- clean or degrease weld, or parts to be welded or soldered
- demonstrate or explain assembly or use of equipment
- examine products or work to verify



manufactured products by hand

- install equipment or attachments on machinery or related structures
- load or unload material or workpiece into machinery
- load, unload, or stack containers, materials, or products
- maintain consistent production quality
- maintain or repair industrial or related equipment/machinery
- maintain production or work records
- monitor production machinery/equipment operation to detect problems
- move or fit heavy objects
- operate collating machine
- operate printing equipment/machinery
- package goods for shipment or storage
- perform safety inspections in manufacturing or industrial setting
- read work order, instructions, formulas, or processing charts
- set up production equipment or machinery
- use hand or power tools
- wrap products

- examine products or work to verify conformance to specifications
- fabricate, assemble, or disassemble manufactured products by hand
- install equipment or attachments on machinery or related structures
- lay out machining, welding or precision assembly projects
- load or unload material or workpiece into machinery
- maintain production or work records
- monitor production machinery/equipment operation to detect problems
- move or fit heavy objects
- operate hoist, winch, or hydraulic boom
- operate metal or plastic fabricating equipment/machinery
- perform safety inspections in manufacturing or industrial setting
- position, clamp or assemble workpiece prior to welding
- preheat metal before welding, brazing, or soldering
- read blueprints
- read production layouts
- read specifications
- read technical drawings
- read work order, instructions, formulas, or processing charts
- recognize characteristics of metals
- set up computer numerical control machines
- set up production equipment or machinery
- solder metal parts or components together
- test manufactured products or materials
- understand technical operating, service or repair manuals
- use acetylene welding/cutting torch
- use hand or power tools
- use non-destructive test equipment
- use precision measuring tools or equipment
- use spot or tack welding techniques
- weld together metal parts, components, or structures

Tools - Examples

- Adjustable widemouth pliers
- Bench vises
- Hand scrapers
- Gas welding torches
- C clamps
- Dial calipers



- Desktop computers
- Side cutting pliers
- Face masks
- Files
- Arc welding equipment
- Undercut gauges
- Safety goggles
- Ball peen hammers
- Hand clamps
- Power hoists
- Hydraulic booms
- Heating furnaces
- Laser cutters
- Laser-beam machines
- Walk-behind lift trucks
- Product loading equipment
- Vise grip pliers
- Magnifiers
- Micrometers
- Workpiece positioning jigs
- Chipping hammers
- Power grinders
- Safety gloves
- Center punches
- Rulers
- Slip-joint pliers
- Soldering machines
- Layout squares
- Measuring tapes
- Fillet weld gauges
- Tongs
- Cold-welding machines



- Welding electrodes
- Welding helmets
- Welding tip cleaning files
- Welding torch tips
- Brazing robots
- Tip dressers
- Spot welding guns
- Hydraulic winches
- Wire brushes

Labor Market Comparison

Description	Bindery Workers	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	Difference
Median Wage	\$ 26,130	\$ 36,960	\$ 10,830
10th Percentile Wage	\$ 17,110	\$ 23,370	\$ 6,260
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 31,490	\$ 44,750	\$ 13,260
90th Percentile Wage	\$ 36,420	\$ 49,220	\$ 12,800
Mean Wage	\$ 26,320	\$ 36,640	\$ 10,320
Total Employment - 2007	350	120	-230
Employment Base - 2006	366	157	-209
Projected Employment - 2016	293	160	-133
Projected Job Growth - 2006-2016	-19.9 %	1.9 %	21.8 %
Projected Annual Openings - 2006-2016	5	3	-2

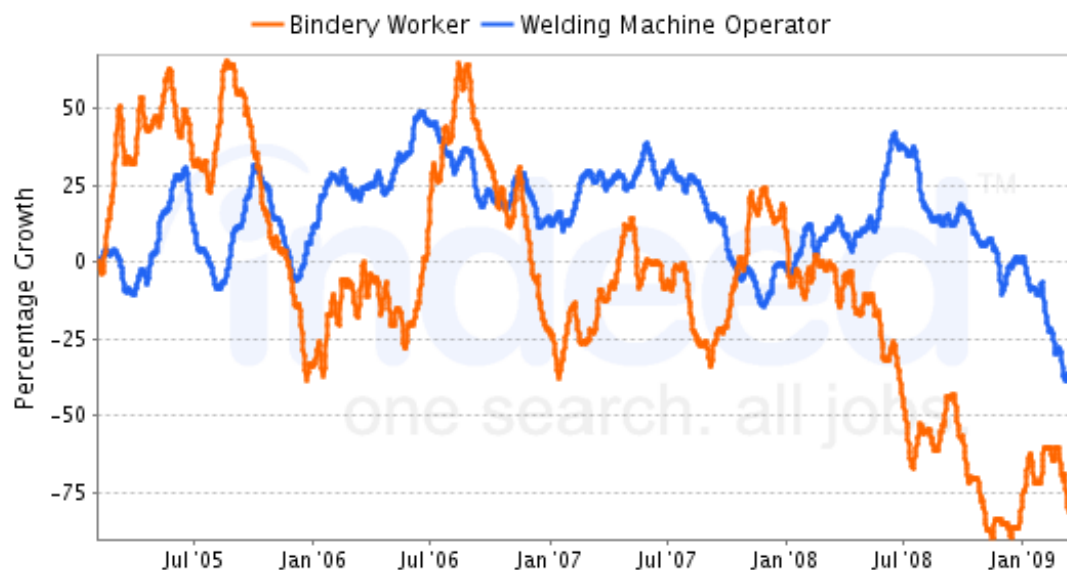
National Job Posting Trends

Trend for Bindery Workers

Trend for Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders



Job Trends from Indeed.com



Data from [Indeed](http://Indeed.com)

Recommended Programs

Welder/Welding Technologist

Welding Technology/Welder. A program that prepares individuals to apply technical knowledge and skills to join or cut metal surfaces. Includes instruction in arc welding, resistance welding, brazing and soldering, cutting, high-energy beam welding and cutting, solid state welding, ferrous and non-ferrous materials, oxidation-reduction reactions, welding metallurgy, welding processes and heat treating, structural design, safety, and applicable codes and standards.

Institution	Address	City	URL
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu

Maine Statewide Promotion Opportunities for Bindery Workers

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
51-5011.00	Bindery Workers	100	2	350	\$26,130.00	\$0.00	-20%	5
51-4122.00	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	88	2	120	\$36,960.00	\$10,830.00	2%	3



51-4031.00	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	88	2	450	\$27,500.00	\$1,370.00	-14%	11
51-5023.00	Printing Machine Operators	87	2	790	\$29,710.00	\$3,580.00	-3%	18
51-4193.00	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	87	2	120	\$32,160.00	\$6,030.00	16%	5
45-4022.00	Logging Equipment Operators	81	1	1,390	\$29,280.00	\$3,150.00	4%	46
51-9191.00	Cementing and Gluing Machine Operators and Tenders	81	1	80	\$27,620.00	\$1,490.00	-15%	2
51-9032.00	Cutting and Slicing Machine Setters, Operators, and Tenders	81	2	710	\$31,350.00	\$5,220.00	-23%	12
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	81	2	910	\$38,230.00	\$12,100.00	-26%	23
51-9041.00	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	80	2	260	\$28,330.00	\$2,200.00	-7%	5
51-2031.00	Engine and Other Machine Assemblers	79	3	20	\$29,010.00	\$2,880.00	-45%	1
51-4034.00	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	79	3	110	\$34,350.00	\$8,220.00	-9%	2
51-9195.07	Molding and Casting Workers	79	2	0	\$26,980.00	\$850.00	7%	20
51-4121.06	Welders, Cutters, and Welder Fitters	79	2	1,610	\$38,030.00	\$11,900.00	7%	49
51-9051.00	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	79	2	300	\$32,980.00	\$6,850.00	-18%	9



Top Industries for Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Motor vehicle parts manufacturing	336300	19.38%	10,236	9,164	-10.47%
Architectural and structural metals manufacturing	332300	7.67%	4,053	4,867	20.11%
Agriculture, construction, and mining machinery manufacturing	333100	6.00%	3,167	3,325	5.00%
Self-employed workers, primary job	000601	5.61%	2,961	3,548	19.81%
Motor vehicle body and trailer manufacturing	336200	4.84%	2,556	2,812	10.04%
Other general purpose machinery manufacturing	333900	4.26%	2,251	2,285	1.52%
Ventilation, heating, air-conditioning, and commercial refrigeration equipment manufacturing	333400	3.79%	2,001	2,070	3.45%
Other fabricated metal product manufacturing	332900	3.68%	1,942	1,936	-0.36%
Ship and boat building	336600	3.18%	1,679	2,113	25.87%
Machine shops	332710	2.65%	1,398	1,301	-6.97%
Boiler, tank, and shipping container manufacturing	332400	2.47%	1,302	1,320	1.34%
Electrical equipment manufacturing	335300	1.82%	964	921	-4.45%
Spring and wire product manufacturing	332600	1.78%	939	782	-16.75%
Employment services	561300	1.55%	817	1,163	42.33%
Forging and stamping	332100	1.55%	818	720	-12.00%

Top Industries for Bindery Workers

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Printing and related support activities	323100	75.67%	49,078	34,998	-28.69%
Employment services	561300	4.66%	3,020	3,822	26.56%
Converted paper product manufacturing	322200	2.30%	1,489	1,125	-24.47%
Advertising and related services	541800	1.69%	1,095	1,112	1.55%
Newspaper publishers	511110	1.53%	993	765	-22.90%
Self-employed workers, primary job	000601	1.32%	853	818	-4.12%
Specialized design services	541400	0.81%	528	636	20.43%
Colleges, universities, and professional schools, public and private	611300	0.42%	271	273	0.69%
Federal government, excluding postal service	919999	0.36%	234	199	-14.92%
Paper and paper product merchant wholesalers	424100	0.33%	214	206	-3.85%

Other support services	561900	0.29%	189	233	23.30%
Management of companies and enterprises	551100	0.17%	109	113	3.75%
State government, excluding education and hospitals	929200	0.15%	100	88	-11.68%
Elementary and secondary schools, public and private	611100	0.11%	71	68	-5.16%
Industrial machinery manufacturing	333200	0.11%	70	52	-26.26%